

CLAIM AMENDMENTS

1. (Currently amended) A method for automatic installation of a digital certificate on a ~~network device~~ cable modem in a data-over-cable system, the method comprising:

determining whether a digital certificate is installed on the cable modem ~~network device~~;
if not,

generating a digital certificate filename on the cable modem ~~network device~~;

sending a digital certificate request including the digital certificate filename to a predetermined network server;

receiving a digital certificate file including at least one digital certificate from the network server; and

storing the at least one digital certificate received from the network server on the cable modem ~~network device~~;

wherein the digital certificate is required to authenticate the cable modem on a Cable Modem Termination System (CMTS).

2. (Original) A computer readable medium having stored therein instructions for causing a processor to execute the method of claim 1.

3. (Currently amended) The method of claim 1, wherein the ~~network device comprises a cable modem, and the~~ network server comprises a Trivial File Transfer Protocol server.

4. (Original) The method of claim 1, wherein the digital certificate comprises an X.509 security digital certificate.

5. (Currently amended) The method of claim 1, wherein the step of generating a digital certificate filename comprises using a type of the cable modem ~~network device~~, a physical address of the cable modem ~~network device~~ and an authentication data string.

6. (Currently amended) The method of claim 5, wherein the authentication data string is generated on the cable modem ~~network device~~ by applying a hash function to at least one configuration setting associated with the cable modem ~~network device~~.

7. (Original) The method of claim 6, wherein the at least one configuration setting comprises a MAC address, a serial number or a secret string.

8. (Currently amended) The method of claim 1, further comprising:
obtaining a globally routable network address on the cable modem ~~network device~~ prior to sending the digital certificate request to the network server; and
employing the globally routable network address for sending the digital certificate request to the network server.

9. (Currently amended) The method of claim 8, wherein the step of obtaining the globally routable network address on the cable modem ~~network device~~ comprises:

retrieving network address information from at least one data packet sent from at least one customer entity; and

obtaining a physical address of a network gateway associated with the at least one customer entity.

10. (Original) The method of claim 9, wherein the network address information comprises an Internet Protocol address and a Medium Access Control address associated with the customer entity.

11. (Currently amended) The method of claim 1, further comprising:
validating the at least one digital certificate received from the network server prior to storing the at least one digital certificate on the cable modem ~~network device~~.

12. (Original) The method of claim 1, wherein the at least one digital certificate comprises a device digital certificate.

13. (Currently amended) The method of claim 12, wherein the at least one digital certificate further comprises a cable modem ~~network device~~ manufacturer digital certificate.

14. (Currently amended) A method for providing digital certificates to at least one cable modem network device in a data-over-cable system, the method comprising:

receiving a digital certificate request including a digital certificate filename on a network server from a cable modem ~~network device~~;

authenticating the request on the network server using at least one parameter specified in the digital certificate filename;

generating at least one digital certificate for the cable modem ~~network device~~; and

providing the at least one digital certificate from the network server to the cable modem ~~network device~~;

wherein the digital certificate is required to authenticate the cable modem on a Cable Modem Termination System (CMTS).

15. (Original) A computer readable medium having stored therein instructions causing a processor to execute the method of claim 14.

16. (Currently amended) The method of claim 14, wherein the filename comprises a type of the cable modem ~~network device~~, a physical address of the cable modem ~~network device~~, and authentication data string generated on the cable modem ~~network device~~.

17. (Original) The method of claim 16, wherein the step of authenticating the request using the at least one parameter specified in the digital certificate filename comprises:

generating an authentication data string on the network server; and

comparing the authentication string generated on the network server with the authentication data string specified in the received digital certificate filename.

18. (Original) The method of claim 14, wherein the network server comprises a Trivial File Transfer Protocol server.

19. (Currently amended) The method of claim 14, wherein the at least one digital certificate for the cable modem network device is generated on the network server.

20. (Currently amended) The method of claim 14, further comprising:
requesting a digital certificate from a second network server upon receiving the digital certificate request from the cable modem network device; and
receiving the digital certificate on the network server from the second network server, wherein the second network server comprises a certificate authority server.

21. (Currently amended) A system for dynamic digital certificate installation in a data-over-cable network, the system comprises, in combination:

a cable modem network device configured to request a digital certificate from a predetermined network server; and

the network server configured to dynamically generate a digital certificate upon receiving a digital certificate request from the cable modem network device, and further configured to provide the digital certificate to the cable modem network device;

wherein the digital certificate is required to authenticate the cable modem on a Cable Modem Termination System (CMTS).

22. (Currently amended) The system of claim 21, wherein the ~~network device comprises a cable modem, and the network~~ server comprises a Trivial File Transfer Protocol ("TFTP") server.

23. (Currently amended) The system of claim 21, wherein the network server's address is installed on the cable modem ~~network device~~ prior to requesting the digital certificate from the predetermined network server.

24. (Currently amended) The system of claim 21, wherein the cable modem ~~network device~~ is further arranged to install the digital certificate in a memory unit upon receiving the digital certificate from the network server.

25. (Original) The system of claim 21, wherein the digital certificate comprises an X.509 certificate.